No. 8500182

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Texas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY, AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT ETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'TAM 108'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D. C. *this* 31st *day of* October *in the year of our Lord one thousand nine hundred and* eighty-eight.

Attest:

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

APPROVAL EXPIRES 4-30-86

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S)
Texas Agricultural Experiment Station

2. TEMPORARY DESIGNATION

3. VARIETY NAME
TAM 108

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
College Station, Texas 77843

5. PHONE *(Include area code)*
409-845-8484

FOR OFFICIAL USE ONLY

PVPO NUMBER
8500182

6. GENUS AND SPECIES NAME
Triticum aestivum L.

7. FAMILY NAME *(Botanical)*
Gramineae

FILING
DATE: July 29, 1985
TIME: 2:00 ☐ A.M. ☒ P.M.

8. KIND NAME
Wheat

9. DATE OF DETERMINATION
8-25-82

FEES RECEIVED
AMOUNT FOR FILING: $ 1,800
DATE: 7/29/85
AMOUNT FOR CERTIFICATE: $ 200.00
DATE: Sept. 20, 1988

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Official Public Agricultural Research Agency of Texas

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
NA

12. DATE OF INCORPORATION
NA

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Kenneth B. Porter, Texas A&M Research & Extension Center,
6500 Amarillo Blvd. West, Amarillo, Texas 79106

PHONE *(Include area code)*: 806-378-5763 or 359-5401

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED
- a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- b. ☒ Exhibit B, Novelty Statement.
- c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
- d. ☒ Exhibit D, Additional Description of Variety.
- e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* ☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ Foundation ☐ Registered ☒ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ Yes *(If "Yes," give date)*
☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES ?
☒ Yes *(If "Yes," give names of countries and dates)*
United States August 9, 1984
☐ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT
[signature]
DATE: JUL 11 1985

SIGNATURE OF APPLICANT

DATE

1

FORM WA-470 (7-84) (Edition of 3-84 is obsolete.)

Exhibit A. Origin and Breeding History of TAM 108.

TAM 108 was selected in the F_9 from the line TX71A562-6, which had the pedigree Sturdy Sib,391-56-D8/Triumph//Centurk. The crosses and selections were made at the USDA Conservation and Production Research Laboratory, Bushland, Texas. The final cross was made in 1969 to the Nebraska selection NB66425 which was later named and released as Centurk. TX71A562-6 demonstrated an exceptionally high yield potential particularly when grown under favorable conditions. Reselections from TX71A562-6 were made in 1977 in an attempt to obtain lines with improved test weight. Selection TX71A562-6-28 appeared to have a slight increase in test weight over TX71A562-6 and the line was increased for further testing. TX71A562-6-28 was entered in Texas and regional yield trials in the fall of 1981. Quality evaluations were initiated in 1982. TX71A562-6-28 was assigned USDA Accession No. PI 495595 and released as TAM 108 August 9, 1984.

TAM 108 is uniform for plant height, maturity and plant color. No significant variants were observed during reproduction and multiplication.

8500182

Exhibit A

'TAM 108' can be maintained and reproduced through seed without changing its characteristics. 'TAM 108' demonstrated genetic stability for yield potential by it's consistent ranking in average yield in the Southern Regional Performance Nurseries grown in the Southern Great Plains in 1982, 1983 and 1984 (27 to 30 locations each year). It ranked no lower than fifth in average yield among the 36 to 39 entries included each year. A single Texas seed source was used for the 1982 trial but locally produced test plot seed was used at the different locations in 1983 and 1984. TAM 108 was shown to be very resistant to soil borne mosaic in 1982 field trials conducted by Dr. H. Jedlinski and Dr. C. M. Brown, Department of Agronomy, University of Illinois, Urbana, IL. It was rated as resistant to soil borne mosaic in a field test at Manhattan, KS in 1984 and in other tests in Kansas since 1982 including a test at Manhattan, KS in 1988. This major attribute of TAM 108 has remained stable since 1982.

Since its release in the fall of 1984, TAM 108 has been certified in both Texas and Kansas without problems and any observable changes in its' characteristics.

Kenneth B. Porter 7-14-88

Kenneth B. Porter Date
Professor of Wheat Breeding

8500182

Exhibit B

TAM 108 is most similar to Centurk 78. TAM 108 differs from Centurk 78 in that the spikelets of TAM 108 are larger than Centurk 78 and the spike of TAM 108 is more lax than Centurk 78. This results in the spikes of TAM 108 being larger than Centurk 78. When grown under irrigated conditions to prevent restriction in size of the spike by environmental conditions, spikes of 50 main tillers were measured from the base of the first fertile spikelet to the base of the apical spikelet. Spikes of TAM 108 were an average of 64.3 mm in length with a standard deviation of the mean of .96 mm. Comparable spikes of Centurk 78 were an average of 54.3 mm in length with a standard deviation of the mean of .73 mm. The standard deviation of the difference between means for spike length was 1.2 mm. The difference in means is significant at the .0001 level of probability.

Laxness of spike may be described by the length of internodes of the rachis. The internodes of each rachis of the 50 spikes of each variety were measured, and the average length of rachis internode was calculated for each variety. The average internode length for TAM 108 was 5.0 mm with a standard deviation of the mean of .04 mm. The average length of internode for Centurk 78 was 4.1 mm with a standard deviation of the mean of .04 mm. The difference between average internode length of the varieties was significant at the .0001 level of probability.

To compare floral parts of the two varieties, spikelets were selected midway of the spikes of the 50 main tillers. Length of glumes of TAM 108 measured from the glume shoulder to the base of the glume averaged 9.1 mm with a standard deviation of the mean of .04 mm. The width of the glumes measured across the widest part from the edge to the midrib averaged 3.5 mm with a standard deviation of the mean of .06 mm. In contrast, the length of glumes of Centurk 78 averaged 7.5 mm and the width averaged 3.1 mm with standard deviations of the means of .06 mm and .02 mm respectively. The standard deviation of the difference between means of glume length was .07 mm and for the differences between glume width was .06 mm. Both the differences are significant at the .0001 level of probability.

Lemma length was measured from the base of the lemma to the apex, which was slightly above the juncture of the lemma and the awn. Lemma width was measured in the same manner as the width of the glume. Lemma length of TAM 108 averaged 11.2 mm with a standard deviation of the mean of .06 mm, and lemma length of Centurk 78 averaged 9.0 mm with a standard deviation of the mean of .06 mm.

Lemma width of TAM 108 averaged 3.4 mm with a standard deviation of the mean of .05 mm, and lemma width of Centurk 78 averaged 3.0 mm with a standard deviation of the mean .02 mm. Standard deviations of the differences between means of lemma length and lemma width were .082 mm and .054 mm respectively. Differences between varieties for both lemma length and lemma width were significant at the .0001 level of probability.

Kenneth B Porter 7-14-88

Kenneth B. Porter Date
Professor of Wheat Breeding

Exhibit B. Novelty of TAM 108.

TAM 108 has a unique combination of characteristics not found in any other hard red winter semi-dwarf wheat cultivar. TAM 108 not only has demonstrated a high yield potential but it is resistant to soil borne mosaic, has seedling resistance to races 15B-2, 151 and 11-32-113 of stem rust and is moderately resistant to powdery mildew. Dr. D. V. McVey, USDA Cereal Rust Laboratory, St. Paul, MN (Table 9, Exhibit D) says the infection data indicates that TAM 108 possesses the SR6, SR17, and SRTMP genes for resistance to stem rust. The Kansas Station in 1984 not only found TAM 108 resistant to soil borne mosaic, as had been previously determined in regional trials, but also found it resistant to spindle streak mosaic present at a number of test locations. Dr. Rollie Sears, wheat breeder at Kansas State University, while visiting at the Bushland, TX Center in May, indicated that spindle streak resistance had been confirmed in the laboratory at Kansas State University.

FORM APPROVED: OMB NO. 0581-0056

EXHIBIT C
(Wheat)

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN AND SEED DIVISION
BELTSVILLE, MARYLAND 20785

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Texas Agricultural Experiment Station

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
College Station, Texas 78743

FOR OFFICIAL USE ONLY

PVPO NUMBER
8500182

VARIETY NAME OR TEMPORARY DESIGNATION
TAM 108

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____ [2] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____

[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO: 1/
[1][4][7] FIRST ~~XXXXXXXX~~ heading from Jan 1 [ ][ ][ ] LAST FLOWERING

4. MATURITY (*50% Flowering*): 1/
[0][1] NO. OF DAYS *EARLIER* THAN Sage [ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS
[0][1] NO. OF DAYS *LATER* THAN [2] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT (*From soil level to top of head*): 1/
[0][8][1] CM. HIGH
[0][3] CM. TALLER THAN TAM 107 [ ]
[1][5] CM. SHORTER THAN [2] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING (*See reverse*):
[3] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[0][3] NO. OF NODES (*Originating from node above ground*)
[1][7] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____
[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[0][8] MM. LEAF WIDTH (*First leaf below flag leaf*)
[2][0] CM. LEAF LENGTH (*First leaf below flag leaf*):

FORM LMGS 470-6 (6-82) (Formerly Form LPGS 470-6 (3-79), which may be used)

1/ Three year average data from the Southern Regional Performance Nursery. See Exhibit D for additional information.

8500182

11. HEAD:

[1] Density: 1 = LAX 2 = DENSE

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4.= OTHER *(Specify)* _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER *(Specify)*: _____

[0 8] CM. LENGTH [1 0] MM. WIDTH

12. GLUMES AT MATURITY:

[3] Length: 1 = SHORT *(CA. 7 mm.)* 2 = MEDIUM *(CA. 8 mm.)* 3 = LONG *(CA. 9 mm.)*

[2] Width: 1 = NARROW *(CA. 3 mm.)* 2 = MEDIUM *(CA. 3.5 mm.)* 3 = WIDE *(CA. 4 mm.)*

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[2] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[ ] Phenol reaction *(See instructions)*: 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER *(Specify)* _____

[0 7] MM. LENGTH [0 3] MM. WIDTH [3 2] GM. PER 1000 SEEDS

17. SEED CREASE:

[ ] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[ ] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

Similar to Centurk

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] STEM RUST *(Races)* 15B2 151 11-32-113

[1] LEAF RUST *(Races)* _____

[2] STRIPE RUST *(Races)* resistant

Moderately

[0] LOOSE SMUT

[2] POWDERY MILDEW

[0] BUNT

[ ] OTHER *(Specify)* _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY [0] APHID *(Bydv.)* [1] GREEN BUG [0] CEREAL LEAF BEETLE

[ ] OTHER *(Specify)* _____

HESSIAN FLY RACES: [0] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Centurk	Seed size	
Leaf size	TAM 107	Seed shape	
Leaf color	Centurk	Coleoptile elongation	
Leaf carriage		Seedling pigmentation	

RECEIVED JUL 29 1985

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. *(See attachment.)*

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

AMS PVPO

Exhibit E. Basis of the Texas Agricultural Experiment Station's ownership of TAM 108.

The Texas Agricultural Experiment Stations ownership of TAM 108 is based on the fact that all crosses, selections and reselections, seed increases and initial distribution of seed for field trials in Texas and the U. S. hard red winter wheat region were made solely by Texas Agricultural Experiment Station employees. All facilities, land and equipment used for initial phases of the development process were provided by TAES or formal cooperators.